

## 9991 Multi-Conductor - Audio, Control and Instrumentation Cable



### Description:

24 AWG stranded (7x32) TC conductors, polyethylene insulation, twisted pairs, individually shielded w/Beldfoil® (100% coverage), 24 AWG stranded TC drain wire, PVC jacket.

### Physical Characteristics (Overall)

#### Conductor

AWG:

# Pairs	AWG	Stranding	Conductor Material
6	24	7x32	TC - Tinned Copper

#### Insulation

Insulation Material:

Insulation Material
PE - Polyethylene

#### Inner Shield

Inner Shield Material:

Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)
Beldfoil® (Z-Fold®)	Tape	Aluminum Foil-Polyester Tape	100

Inner Shield Drain Wire AWG:

AWG
24

Inner Shield Drain Wire Stranding: Stranded

Inner Shield Drain Wire Conductor Material: TC - Tinned Copper

#### Outer Jacket

Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

#### Overall Cabling

Overall Nominal Diameter: 0.330 in.

#### Pair

Pair Color Code Chart:

Number	Color
1	Black & Red
2	Black & White
3	Black & Green
4	Black & Blue
5	Black & Yellow
6	Black & Brown

Pair Lay Length & Direction:

Lay Length (in.)
1.750

### Mechanical Characteristics (Overall)

Operating Temperature Range: -20°C To +80°C

## 9991 Multi-Conductor - Audio, Control and Instrumentation Cable

**UL Temperature Rating:** 80°C (UL AWM Style 2919)

**Bulk Cable Weight:** 62 lbs/1000 ft.

**Min. Bend Radius (Install)/Minor Axis:** 3.500 in.

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

<b>NEC/(UL) Specification:</b>	CM
<b>CEC/C(UL) Specification:</b>	CM
<b>AWM Specification:</b>	UL Style 2919 (30 V 80°C)
<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>	01/01/2004
<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

**UL Flame Test:** UL1685 UL Loading

#### Plenum/Non-Plenum

**Plenum (Y/N):** No

### Electrical Characteristics (Overall)

#### Nom. Characteristic Impedance:

**Impedance (Ohm)**  
60

#### Nom. Capacitance Conductor to Conductor:

**Capacitance (pF/ft)**  
25

#### Nom. Capacitance Cond. to Other Conductor & Shield:

**Capacitance (pF/ft)**  
47

#### Nominal Velocity of Propagation:

**VP (%)**  
66

#### Nom. Conductor DC Resistance:

**DCR @ 20°C (Ohm/1000 ft)**  
24

**Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C:** 18 Ohm/1000 ft

#### Max. Operating Voltage - UL:

**Voltage**  
30 V RMS (UL AWM Style 2919)  
300 V RMS

#### Max. Operating Voltage - Non-UL:

**Voltage Description**  
300

#### Max. Recommended Current:

**Current**

## 9991 Multi-Conductor - Audio, Control and Instrumentation Cable

1.1 Amps per conductor @ 25°C (10°C rise in temp)

### Put Ups and Colors:

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9991 060100	100 FT	6.700 LB	CHROME		6 FS PR #24 PE PVC
9991 0601000	1,000 FT	62.000 LB	CHROME	C	6 FS PR #24 PE PVC
9991 060500	500 FT	32.500 LB	CHROME	C	6 FS PR #24 PE PVC

**Notes:**

C = CRATE REEL PUT-UP.

## Introduction

Belden® paired cable products are manufactured in a variety of gage sizes, dimensions, insulation materials, shielding configurations, and jacketing materials including Plenum and High-Temperature versions to meet the technical requirements of many different types of systems.

Paired cables allow balanced signal transmission, which results in lower crosstalk through common mode rejection. Due to the improved noise immunity of twisted pairs, they generally permit higher data speeds than multi-conductor cables.

As an aid to proper cable selection, both the suggested working voltages and the maximum temperature ratings are indicated for each applicable paired cable selection.

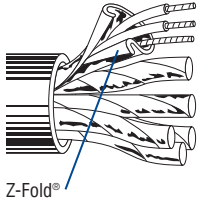
Most of our paired cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a paired cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

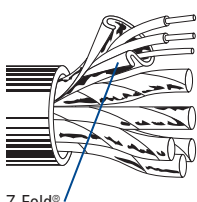
### Paired Cables Packaging

Belden's unique UnReel® cable dispenser is available for many of the paired cable products listed in this section. The letter "U" before the specified put-up length denotes UnReel packaging.

# Individually Shielded

## Audio, Control and Instrumentation Cables

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Color Code	Standard Lengths		Standard Unit Weight		Nom. DCR		Nominal OD		Nom. Imp. of Prop. (Ω)	Nom. Vel. of Prop.	Nom. Capacitance			
					Ft.	m	Lbs.	kg	Cond.	Shield	Inch	mm			* pF/ Ft.	* pF/ m	** pF/ Ft.	** pF/ m
<b>24 AWG Stranded (7x32) TC Conductors • Twisted Pairs • Individually Shielded w/Beldfoil® (100% Coverage) • 24 AWG Stranded TC Drain Wire</b>																		
<b>Polyethylene Insulation • Chrome PVC Jacket</b>																		
 <p>Z-Fold®</p>	9990	NEC:	3	See Chart 3 (Tech Info Section)	500	152.4	16.0	7.3	24.0Ω/M'	18.0Ω/M'	.255	6.48	60	66%	25	82	47	154
		CM			1000	304.8	36.0	16.4	78.7Ω/km	59.1Ω/km								
		CEC:																
		CM																
	9991	NEC:	6	See Chart 3 (Tech Info Section)	100	30.5	6.7	3.1	24.0Ω/M'	18.0Ω/M'	.330	8.38	60	66%	25	82	47	154
CM	500	152.4			32.5	14.7	78.7Ω/km	59.1Ω/km										
CEC:	1000	304.8			62.0	28.3												
CM																		
	9992	NEC:	9	See Chart 3 (Tech Info Section)	100	30.5	8.8	4.0	24.0Ω/M'	18.0Ω/M'	.383	9.73	60	66%	25	82	47	154
CM	500	152.4			42.5	19.3	78.7Ω/km	59.1Ω/km										
CEC:	1000	304.8			86.0	39.1												
CM																		
	9993	NEC:	12	See Chart 3 (Tech Info Section)	100	30.5	9.8	4.5	24.0Ω/M'	18.0Ω/M'	.428	10.87	60	66%	25	82	47	154
CM	500	152.4			107.0	48.6	78.7Ω/km	59.1Ω/km										
CEC:	1000	304.8			107.0	48.6												
CM																		
	9995	NEC:	25	See Chart 3 (Tech Info Section)	100	30.5	21.2	9.7	24.0Ω/M'	18.0Ω/M'	.636	16.15	60	66%	25	82	47	154
CM	500	152.4			116.0	52.7	78.7Ω/km	59.1Ω/km										
CEC:	1000	304.8			228.0	103.6												
CM																		

Description	Part No.	UL NEC/ C(UL) CEC Type	No. of Pairs	Color Code	Standard Lengths		Standard Unit Weight		Insulation Thickness		Jacket Thickness		Nominal OD		Nominal Capacitance						
					Ft.	m	Lbs.	kg	Inch	mm	Inch	mm	Inch	mm	* pF/ Ft.	* pF/ m	** pF/ Ft.	** pF/ m			
<b>22 AWG Solid Conductors • TC • Twisted Pairs • Individually Shielded w/ Beldfoil (100% Coverage) • 22 AWG Solid TC Drain Wire</b>																					
<b>PVC Insulation • Overall Chrome PVC Jacket</b>																					
 <p>Z-Fold®</p>	8767	NEC:	3	See Chart 3 (Tech Info Section)	U-500	U-152.4	22.5	10.3	.013	.33	.037	.94	.279	7.10	40	131	77	253			
		MPG, CMG			500	152.4	23.0	10.5													
		CEC:			1000	304.8	46.0	21.0													
		MPG, CMG FT4																			
	8768	NEC:	6	See Chart 3 (Tech Info Section)	500	152.4	46.5	21.1	.013	.33	.037	.94	.379	9.60	40	131	77	253			
MPG, CMG	500	152.4			46.5	21.1															
CEC:	1000	304.8			92.0	41.8															
MPG, CMG FT4																					
	8764	NEC	9	See Chart 3 (Tech Info Section)	1000	304.8	122.0	55.5	.013	.33	.040	1.02	.425	10.80	40	131	77	253			
MPG, CMG	1000	304.8			122.0	55.5															
CEC:	1000	304.8			122.0	55.5															
MPG, CMG FT4																					
	8765	NEC	11	See Chart 3 (Tech Info Section)	500	152.4	76.5	34.8	.013	.33	.040	1.02	.470	11.90	40	131	77	253			
MPG, CMG	500	152.4			76.5	34.8															
CEC:	1000	304.8			149.0	67.7															
MPG, CMG FT4																					
	8766	NEC:	15	See Chart 3 (Tech Info Section)	500	152.4	101.5	46.1	.013	.33	.045	1.14	.525	13.30	40	131	77	253			
MPG, CMG	500	152.4			101.5	46.1															
CEC:	1000	304.8			196.0	89.1															
MPG, CMG FT4																					

DCR = DC Resistance • TC = Tinned Copper

\*Capacitance between conductors.

\*\*Capacitance between one conductor and other conductors connected to shield.